Reports S.W.

AUG 12 1957

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
Entomology Research Division

August 5, 1957

To: A. W. Lindquist, Chief, Insects Affecting Man and Animals Branch, Plant Industry Station, Beltsville, Maryland

From: R. C. Bushland

Subject: Weekly Report--7/28 through 8/3/57

Attached are four tables of data associated with the current field test.

Table 1 is a record of egg-mass collections for the period July 28 through August 3. You will note that screw-worm activity continues to be high in the north check area but that egg-mass collections are very poor south and west of the treated area. Within the treated plot the central group of pens produced only 5 egg masses of which 4 were sterile. Pens near the Coast yielded 15 egg masses and 11 of those did not hatch. Since the numbers are so small not much significance can be attached to the 80 and 73 percent sterility figures. Inward migration of mated flies might account for some of the fertile egg masses.

Table 2 is a record of fly releases. Now that the rearing has become routine and the temporary laborers, hired in May, have become proficient the work of rearing proceeds much more smoothly. Also proper facilities are now available for mass rearing at the 2 million weekly rate. Because of better rearing conditions than were attainable early in the program, adult emergence averaged as high as 95 percent last week. For the remainder of the program 15 vats of larvae are being reared weekly instead of the 20 needed previously to assure production of the full quota.

Mr. Skipper has had the assistance of Mr. Simmons of the ADED staff in gathering case-incidence information from cooperating ranchers. Their findings in table 3 fit very well with the goat-pen records. Ranchers in the north check area report no lessening of screw-worm trouble. There has been a decrease in the fly-release area and an even greater reduction of fly activity in the south and west check areas. Farther south and west beyond the area of our goat-pen activities the outbreak is still severe.

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Entomology Research Division

August 5, 1957

[illegible] W. Kirkpatrick, Chief, Insects Affecting Man and Animals
Research, Plant Industry Station, Beltsville, Maryland

From: H. G. Bradley

Subject: Weekly Report--7/29 through 8/3/57

Attached are four tables of data associated with the current field tests.

Table 1 is a record of egg-mass collections for the period July 30 through August 3. You will note that egg-mass collections are very poor north and east of the treated area. Within the treated area, the control group of cages produced only 5 egg masses during 7 days of exposure, whereas the treated group yielded 17 egg masses and 11 of these did not hatch. Since the numbers are so small not much significance can be attached to the 65 and 73 percent sterility figures. Record preparation of males will account for more of the fertile egg masses.

Table 2 is a record of fly releases. See that the rearing has become routine and the temporary laborers hired in May, have become proficient in the work of rearing pupae and emergence. Also proper facilities are now available for pupa rearing at the 2 million weekly rate. Because of better rearing conditions there were relatively early in the program, adult emergence averaged as high as 85 percent last week. For the remainder of the program 15 cans of larvae are being reared weekly instead of the 20 needed previously to assure production of the full quota.

Mrs. Schaper has had the assistance of Mr. Stevens of the ARS staff in marking case-incidence information from copperhead questions. Their findings in Table 3 fit very well with the pupa-pan records. Location in the north check area report no incidence of screw-worm myasis. There has been a decrease in the fly-release area but no even greater reduction of fly activity in the south and west check areas. Further work and work beyond the area of our pupa-pan activities the outbreak is still severe.

2-A. W. Lindquist-8-5-57

In table 4 Mr. Skipper has assembled rancher reports on the spring activity of screw-worms as reflected by the case incidence during the calving season. In 1956, which was considered an average year, there were navel cases in about half the newborn calves while this year the incidence was 100 percent on most ranches and no rancher reported less than 80 percent. These figures of roughly 50 percent last year and 100 percent this year do not show the full story since this year many calves were repeatedly infested with large numbers of egg masses.

Dr. Knipling reviewed the experiment last week accompanied by Dr. Byerly. After Dr. Byerly's departure we discussed the status of the work and it was decided that goat-pen records should be maintained at least until September 1, and possibly continued until mid September if there should be a marked increase in screw-worm activity.

Mr. Husman has completed construction and installation of an automatic box dispenser for releasing sterilized flies. It worked successfully in a test flight and demonstration observed by Drs. Byerly and Knipling. It will be further tested after August 6 along with another airplane release device which Mr. Messenger will send from Beltsville.

Since the native fly population is now so low in the release area sterilized fly releases will be terminated on August 17 as previously scheduled.

The experiment will be completed within the budget allotted for this summer's activities.

(In triplicate)
cc: Dr. Sharman (5)
Dr. Campbell (1)
Mr. Bruce (2)
Dr. C. N. Smith (1)
Kerrville (1)
Corvallis (1)

Table 1.--Egg mass data, week of 7/28 through 8/3/57

Pen number	Location	Total masses	Sterile masses	Group total	Percent sterile
1	15 miles north of treated area	54	0		
2		49	0		
3		11	0		
4		16	0	133	0
5	Near center of treated area	1	1		
6		4	3		
7		0	0		
8		0	0	5	80
9	Southeast of center of treated area	4	3		
9a		4	2		
9b		2	2		
10		4	4		
11		1	0	15	73
13	14 miles south of treated area	0	0		
14		0	0		
15		2	0		
16		1	0	3	0
17	12 miles west of treated area	0	0		
18		0	0		
19		2	0		
20		1	0	3	0

Table 2.--Fly release data, week of 7/28 through 8/3/57

Date (1957)	Number of boxes	Approximate number of flies
7/29	810	417,150
7/30	900	463,500
7/31	850	437,750
8/1	1,019	524,785
8/2	816	420,240
8/3	585	301,275
Total	4,980	2,564,700

Table 3.--Screw-worm incidence in range cattle expressed as cases per week per 1,000 acres, April-July, 1957.

Ranchers reporting	Total acreage	April	May	5/26-6/1	6/2-6/8	6/9-6/15	6/16-6/22	6/23-6/29	6/30-7/6	7/7-7/13	7/14-7/20	7/21-7/27
						North check area						
5	22,010	1.4	1.4	2.4	2.4	1.6	2.9	2.0	1.9	2.7	3.0	3.1
						West check area						
8	211,880	0.5	0.5	1.1	1.1	0.6	0.2	0.2	0.3	0.1	0.1	0.1
						South check area						
4	74,000	1.2	1.2	3.2	2.6	2.2	1.7	0.6	0.4	0.3	0.2	0.1
						Fly release area						
18	448,560	0.6	0.6	1.7	1.3	1.0	0.8	0.7	0.7	0.6	0.3	0.2
						Extended area--50 miles south and west of release area						
13	59,260	3.5	3.4	2.3*	2.3*	2.3*	2.3*	2.3*	2.3*	2.3*	3.0	2.1

*June weekly average carried through until week of July 14-20 when this area was established.

Table 4.--Percentage screw-worm infestation in newborn calves as reported by rancher cooperators for 1956 and 1957

County	Ranch	1956	1957
Brevard	A. Duda & Son		
	Commercial herd	40	100
	Registered herd	30	100
	Susie Q. (H. Herndon)	80	100
Okeechobee	S. S. Cramer	40	95
	G. A. Rhodes	50	100
	Williams 101	60	90
Osceola	Leroy Bass	60	100
	Bronson's (Southern Part)	50	100
	W. P. Hayman & Sons	75	100
	G. W. Mann	80	100
	Rocking M (F. Mitchell)	70	100
Polk	Dr. Harmon (Claude Wilson)	50	100
	Polk Brahman Farms	50	80
Seminole	W. K. Kilbee	75	100
St. Lucie	Alto Adams & Son	60	95
	Wright Carlton	60	95
	Frank Raulerson	60	90
	R. E. Trague	40	85

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
Entomology Research Division

OHS

P. O. Box 3391
Orlando, Florida
August 14, 1957

To: A. W. Lindquist, Chief, Insects Affecting Man and Animals Research Branch, Plant Industry Station, Beltsville, Md.

From: R. C. Bushland

Subject: Weekly Report--8/4 through 8/10/57

Enclosed are three tables of data concerning our screw-worm field test.

Table 1 summarizes Mr. Baumhover's egg mass records. You will note that only the north check area showed much screw-worm activity. Of 25 egg masses collected at 9 goat pens in the treated plot, 17 failed to hatch and 8 were fertile. Those 8 hatching masses which represent an average of less than one per goat pen might well have been laid by flies migrating into the area. As evidence of fly migration, six sterile masses were collected outside the treated area.

Table 2 shows that Mr. Graham almost precisely met his quota of 2,000,000 flies last week. Only 15 rearing vats were required to produce these flies while 20 were used earlier in the program. This summer's rearing experience has served to develop techniques whereby we can feel confident of producing 133,000 flies per vat which is quite an improvement over the 100,000 per vat reared at the start of the program.

In table 3, Mr. Skipper has summarized case incidence records for the period July 28 to August 3. Those records check with the goat pen data showing low fly activity in the release area and in the south and west check areas, but the outbreak still continues in the north check area.

For the last item in table 3, Mr. Simmons, who has been employed temporarily by ADED, checked the territory 50 miles south and west of the test area. He also found little screw-worm activity as shown by the figures listed for the Extended Area.

This week, Mr. Harrell of the Florida Livestock Board, is checking a northern extended area beyond our north check area. Indications are that the screw-worm outbreak is extensive to the north.

2-A. W. Lindquist-8-14-57

Our treated area, the south and west check areas, and the territory below that is flooded and much of the pasture land is under water from the accumulation of summer rains. The territory around Fort Myers and Sarasota is also flooded and there is so little screw-worm activity that we had to discontinue our field tests with Bayer 21/199 for lack of infestations. (Mr. Skipper is now lining up more Bayer 21/199 tests for north central Florida.)

Much of our northern check area is also flooded but there is also some well-drained ground. Further, some ranchers in the north check area do not practice controlled breeding of their cattle. Apparently better drainage and more susceptible animals account for the continued screw-worm outbreak in the north check area.

Last week we made field observations on fly dispersal from aircraft. Boxes dropped from an altitude of 200 feet had practically no flies in them by the time they reached the ground if they were properly opened by the mechanical release devices. Mr. Husman's equipment, both the hand cranked machine and his new automatic device, opened the boxes so thoroughly that the inner cardboard liners came out in the air and the flies were well scattered.

The experimental equipment made at Beltsville and brought down for testing by Mr. Wittam did not work as well. They had made it to fit empty boxes and our boxes loaded with flies had swelled (apparently from taking up moisture) so that they became stuck in the Beltsville device. Also, the Beltsville equipment did not turn the boxes inside out as does the Husman device and the majority of the flies stayed in the boxes until they hit the ground.

Mr. Husman fitted another airplane with his net fly catcher and we flew at various distances behind and below the release airplane. The flies scattered so quickly that even when we followed close enough to bump into the release boxes as they fell, we caught more empty pupal cases than screw-worm flies. The flies dispersed so rapidly after the boxes were opened that the numbers caught by the following airplane were negligible and it was not possible to estimate how far they drifted before reaching the ground.

(In triplicate)
cc: Dr. Sharman (5)
Dr. Campbell (1)
Mr. Bruce (2)
Dr. C. N. Smith (1)
Kerrville (1)
Corvallis (1)

Table 1.--Egg mass data, week of 8/4 through 8/10/57

Pen number	Location	Total masses	Sterile masses	Group total	Percent sterile
1	15 miles north of treated area	57	2		
2		17	2		
3		8	0		
4		30	2	112	5.4
5	Near center of treated area	4	3		
6		5	5		
7		2	0		
8		0	-	11	73
9	Southeast of center of treated area	1	0		
9a		4	2		
9b		4	4		
10		3	2		
11		2	1	14	64
13	14 miles south of treated area	0	-		
14		8	0		
15		0	-		
16		2	0	10	0
17	12 miles west of treated area	0	-		
18		0	-		
19		0	-		
20		0	-	0	-

Table 2.--Fly release data, week of 8/4 through 8/10/57

Date (1957)	Number of boxes	Approximate number of flies
8/5	795	413,400
8/6	1,012[a/]	526,240
8/7	1,050	546,000
8/8	999[b/]	519,480
Total	3,856	2,005,120

a/ All flies released near the East Coast in a dispersal test.

b/ 292 boxes released to test a new device over northern one-fourth of release area.

Table 3.--Screw-worm incidence in range cattle expressed as cases per week per 1,000 acres for week July 28--August 3.

No. ranchers reporting	Total acreage	Number of cases
	North check area	
5	22,010	2.8
	West check area	
8	211,880	0.1
	South check area	
4	74,000	0.2
	Fly release area	
18	448,560	0.2
Extended area-50 miles south and west of release area		
20	429,760	0.1

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
Entomology Research Division

P. O. Box 3391
Orlando, Florida
August 26, 1957 OHS

To: A. W. Lindquist, Chief, Insects Affecting Man and Animals Research Branch, Plant Industry Station, Beltsville, Maryland

From: C. L. Smith

Subject: Weekly Report--8/18 through 8/24/57

Enclosed are two tables of data relative to our screw-worm field test.

Table 1 summarizes the egg mass records in goat pens at the various locations. You will note from this table that screw-worm activity continues rather heavily in the area north of the treated area. There has been a steady decline in the number of eggs collected in the other areas. Some of this reduction can be attributed to the heavy rains which have occurred in recent weeks. At one time during the week 3.69 inches of rain were recorded in less than 12 hours. This has caused even greater flooding of the St. Johns River lowlands. I believe that this is the first time since the inception of the test we failed to collect eggs from traps 5, 6, 7, and 8 which are near the center of the treated area.

Table 2 presents data summarized by Mr. Skipper of the rancher cooperation in connection with the field test. It is expected that we will make the last observation in the field either August 30 or 31.

C. L. Smith

(In triplicate)
cc: Dr. Sharman (5)
Dr. Campbell (1)
Mr. Bruce (2)
Dr. C. N. Smith (1)
Kerrville (1)
Corvallis (1)

Table 1.--Egg mass data, week of 8/18 through 8/24/57

Pen number	Location	Total masses	Sterile masses	Group total	Percent sterile
1	15 miles north of treated area	53	3		
2		17	2		
3		21	0		
4		38	2	109	0.06
5	Near center of treated area	0	-		
6		0	-		
7		0	-		
8		0	-	0	-
9	Southeast of center of treated area	0	-		
9a		0	-		
9b		15	8		
10		2	1		
11		0	-	17	.53
13	14 miles south of treated area	0	-		
14		1	0		
15		2	0		
16		0	-	3	0
17	12 miles west of treated area	0	-		
18		0	-		
19		0	-		
20		0	-	0	-

Table 2.--Screw-worm incidence in range cattle expressed as cases per week per 1,000 acres for the week August 11 through August 17, 1957

No. ranchers reporting	Total acreage	Number of cases
	North check area	
4	22,010	1.5
	West check area	
8	211,880	0.1
	South check area	
4	74,000	.2
	Fly release area	
18	448,560	.05
	Extended area-50 miles northwest, west and south of release area	
85	652,115	1.1

Table 8.--Homeowner loadouts in range cattle operations
as cattle per herd per 1,000 acres for the herd
August 11 through August 17, 1927

No. ranches	Total acreage	Number of cows
	South about area	
4	80,000	1.5
	West about area	
9	321,000	0.2
	South about area	
4	75,000	.5
	The relative area	
12	496,000	.05
	Estimated area-50 value increment,	
	west and south of relative area	
25	830,115	1.1

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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
Entomology Research Division

P. O. Box 3391
Orlando, Florida
September 4, 1957

To: A. W. Lindquist, Chief, Insects Affecting Man and Animals Research Branch, Plant Industry Station, Beltsville, Maryland

From: C. L. Smith

Subject: Weekly Report--8/25 through 8/30/57

Enclosed are three tables of data relative to our screw-worm field test which was terminated August 30.

Table 1 summarizes the egg mass records in goat pens at various locations. It should be noted that egg mass collections were still numerous in the area 15 miles north of the treated area and that there was a slight increase in the number of egg masses collected in the area 14 miles south of the treated area.

Table 2 presents data summarized by Mr. Skipper, of rancher cooperation in connection with the field test.

Table 3 summarizes the weekly rainfall records in the five areas under observation and is a continuation of the rainfall data presented in the report of July 23.

All of the goats used in the field test have been trucked to the Bithlo laboratory where they will be used in a larvicide test in connection with the evaluation of Bayer 21/199.

It is expected that all of the panels from which the goat pens were constructed will be moved to the Bithlo laboratory by the end of this week.

C. L. Smith

(In triplicate)
cc: Dr. Sharman (5)
Dr. Campbell (1)
Mr. Bruce (2)
Dr. C. N. Smith (1)
Kerrville (1)
Corvallis (1)

Table 1.--Egg mass data, week of 8/25 through 8/30/57.

Pen number	Location	Total masses	Sterile masses	Group total	Percent sterile
1	15 miles north of treated area	27	0		
2		18	0		
3		18	1		
4		36	0	99	1
5	Near center of treated area	4	0		
6		1	0		
7		0	-		
8		0	-	5	0
9	Southeast of center of treated area	2	0		
9a		1	0		
9b		6	4		
10		1	0		
11		4	1	14	36
13	14 miles south of treated area	0	-		
14		6	2		
15		7	0		
16		0	-	13	15
17	12 miles west of treated area	0	-		
18		0	-		
19		0	-		
20		0	-	0	-

Table 2.--Screw-worm incidence in range cattle expressed as cases per week per 1,000 acres, for the week August 18 through August 24, 1957.

No. ranchers reporting	Total acreage	Number of cases
	North check area	
4	22,010	1.9
	West check area	
8	211,880	0.1
	South check area	
4	74,000	.2
	Fly release area	
18	448,560	.05
	Extended area 50 miles northwest, west and south of release area	
18	652,115	1.0

Table 3.--Weekly rainfall records--continued from report of July 23, 1957

County	Week ending 7/19	7/26	8/2	8/9	8/16	8/23	8/30	Average total
North check area								
Volusia	2.20	1.38	3.00 3.13	0.24 1.74	0.01	--	0.42	
Seminole	1.40	2.22	--	4.34	--	3.22	1.60	
Orange	2.44	.58	.93	2.22	.22	4.29	1.98	
Average	2.01	1.39	2.35	2.15	.11	3.75	1.33	1.84
Release area								
Brevard	3.30	1.68	1.74	--	2.08	--	1.70	
Osceola	4.60	2.28	--	--	.31	.83	1.54	
Indian River	.82	--	1.09	.86	.62	.50	2.73	
Average	2.91	1.98	2.41	.86	1.50	.66	1.99	1.76
West check area								
Polk	.22 .77 1.43 --	.92 .41 1.43 1.34	1.55 1.18 2.44 --	2.19 2.78 5.35 4.13	3.37 3.24 .29 --	1.16 2.79 1.12 2.05	2.94 .55 3.18 2.10	
Average	.81	1.02	1.72	3.61	2.30	1.78	2.19	1.92
South check area								
St. Lucie	1.29	1.75	2.38	2.18	.24	1.93	1.78	
Okeechobee	1.19	2.50	2.06	2.39	.09	3.87	--	
Average	1.24	2.13	2.22	2.28	.16	2.90	1.78	1.81